

# Telemedicine in Support of Remote Medical Operations

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*This poster presents the United States Military Telemedicine project and how telemedicine is used to support United Nations medical operations in Croatia and Macedonia. A 40 bed inpatient facility in Croatia is using telemedicine to communicate with medical centers in Germany and the United States. Treatment stations in Macedonia have telemedicine connections to hospitals in Croatia, Germany, and the United States.*

## BACKGROUND

Telemedicine is used by the United States Military to enhance medical care at remote locations around the world. The Army Medical Research and Development Command and the Uniformed Services University of the Health Sciences (USUHS) have embarked on a prototype project to test the ability of telemedicine to enhance the capabilities of deployed military hospitals. The telemedicine project is uses off-the-shelf technology to transmit real-time video, data, and high resolution still-images. Croatia and Macedonia use high-speed satellite telephones to link to the global military telemedicine network.

## MEDICAL APPLICATIONS

Telemedicine supports medical diagnosis, patient treatment, preventive medicine, video "soap notes", medical training (bilateral), patient documentation, supervision, and morale support for deployed medical personnel. The telemedicine project is designed to test the telemedicine technology and determine cost effective uses for this technology. The technological research issues are ease-of-use, reliability, and diagnostic quality of images. Medical researchers study the value of remote consultation, the ability to improve medical care, the value of video "soap notes", and the improvements in medical training. Operational issues include determining how telemedicine technology will be integrated with the routine health care delivery process.

## TRAINING AND SUPPORT

The military recognized a need to train medical personnel on the technical and operational aspects of telemedicine. The USUHS designed telemedicine courses for medics and physicians. The medics course includes enhanced life saving training and

training on how to use telemedicine consultation. Physicians are taught how to interact with the telemedicine equipment and how to use telemedicine to extend expert clinical knowledge to medics and physicians located in remote locations.

## PRELIMINARY FINDINGS

The military is using telemedicine for several medical applications. Radiology and microbiology images are transmitted from Croatia to military hospitals in the United States. Final reports are electronically sent back to Croatia and Macedonia. Real-time patient diagnosis and treatment are accomplished using telemedicine. Medics and physicians are beginning to find a telemedicine "comfort zone". They are discovering how and when to use telemedicine. The project team is constantly improving the equipment, procedures, and system documentation.

## CONCLUSION

Telemedicine will change the delivery of health care from the initial health care provider to the expert consultant. The current military implementation of telemedicine provides a fertile environment to study the impact of this technology. Advances made in the military telemedicine project will improve future humanitarian and military medical operations.

## References

Goeringer, F. Hagmann, J. Fay, C.R.. Operation Primetime Project Plan, Army Medical Department Research and Development Command, 1994 January.

Sanders, J.H. and Tedesco F.J.. Telemedicine: bringing medical care to isolated communities. Journal of the Medical Association of Georgia, 1993 May, 82(5):237-41.

Hubble JP; Pahwa R; Michalek DK; Thomas C; Koller WC. Interactive video conferencing: a means of providing interim care to Parkinson's disease patients. Movement Disorders, 1993 Jul, 8(3):380-2.